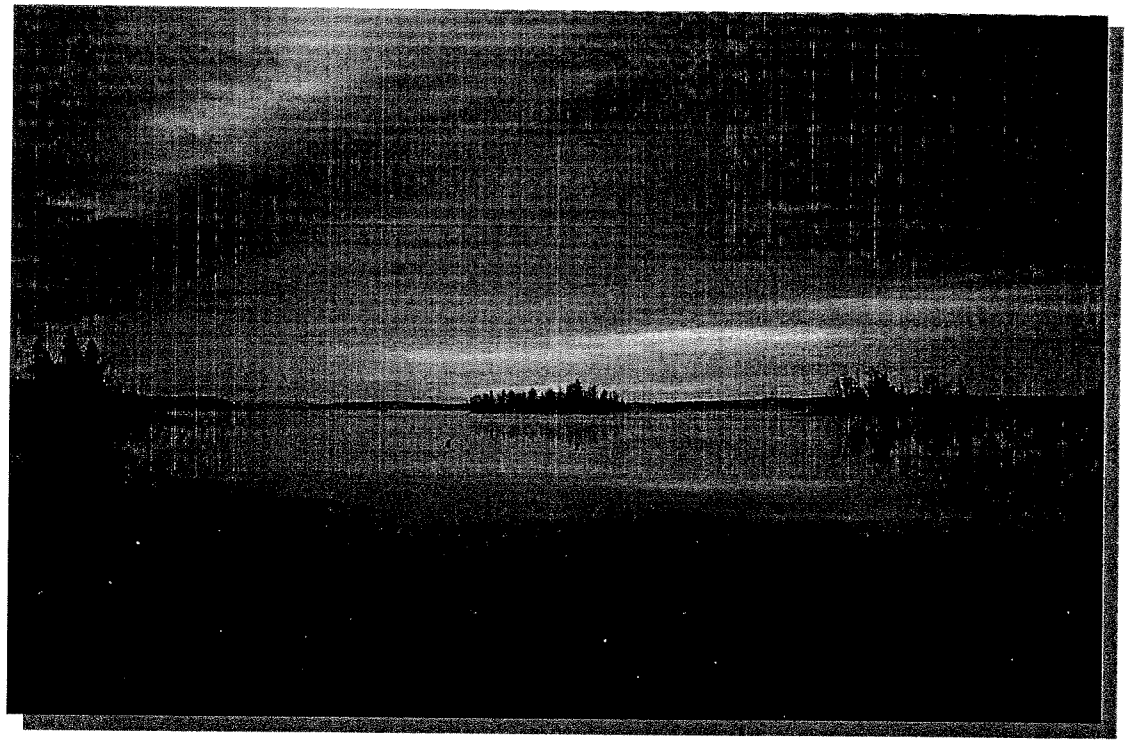
GILE FLOWAGE WATERSHED COMPREHENSIVE PLAN-PHASE I



Gile Flowage Sunrise

WISCONSIN DEPT. OF NATURAL RESOURCES
LAKE PLANNING GRANT
LPL-900-04

SUBMITTED JOINTLY BY THE
TOWN OF CAREY AND THE TOWN OF PENCE
IRON COUNTY, WISCONSIN

DECEMBER, 2004

GILE FLOWAGE WATERSHED COMPREHENSIVE PLAN-PHASE I

REPORT CONTENTS
&
DELIVERABLES

as per Lake Planning Grant Agreement

Introduction
- Map of Project Area
- Grant Activities Timeline

Environmental Inventory of the Gile Flowage Watershed

Shoreland Assessment

Base Planning Maps

Review and Assessment of Existing Land Use Regs and Plans

Survey of Gile Flowage Watershed Landowners

Gile Flowage Lake History

Plan for Sharing Project Results

A Lake Association Formed For the Flowage

Phase I Preliminary Plan

A Steering Committee Of Stakeholders

Wisconsin Department of Natural Resources
Lake Planning Grant
LPL-900-04
In partnership with the
Towns of Carey and Pence
Iron County, Wisconsin

Gile Flowage Watershed Comprehensive Plan-Phase I

GILE FLOWAGE ENVIRONMENTAL INVENTORY

Conducted by Whitewater Associates, Inc.

Gile Flowage Watershed Project
Phase I – Environmental Information Inventory
(Iron County, Wisconsin)

Submitted to:

Towns of Carey and Pence, Iron County, Wisconsin
Joint Planning Committees
C/O Chuck Splonskowski - Chairman, Town of Carey
5053 Anderson Road
Hurley, Wisconsin 54534

Prepared and Submitted by:

White Water Associates, Inc.
Contact: Dean B. Premo, Ph.D., President
429 River Lane, P.O. Box 27
Amasa, Michigan 49903
Phone: (906) 822-7889
Fax: (906) 822-7977
E-mail: dbpremo@up.net

Date: April 5, 2004

TABLE OF CONTENTS

INTRODUCTION

This proposal and bid is White Water Associates' response to the request for proposal issued by the ***Towns of Carey and Pence, Iron County, Wisconsin*** (hereafter the *Client*) on February 6, 2004. This document thoroughly presents our experience and expertise and conveys our interest and enthusiasm in working with the Client on this exciting project. We recognize that there may be opportunities for future involvement with the Client as it endeavors to perpetuate the high quality watershed ecosystem that includes the Gile Flowage.

The work envisioned by the Client and addressed in this proposal will benefit from additional funding from sources such as the Wisconsin Department of Natural Resources (WDNR) Lake Planning Grants or the new WDNR Aquatic Invasive Species Prevention & Control Grants. White Water Associates has been highly effective at preparing successful Lake Planning Grant applications and carrying out Lake Planning projects. If we are selected for the Gile Flowage work, we will be eager to participate in helping prepare grant applications for additional funding in future phases.

Our philosophical approach to lake stewardship can be characterized by the concept of "adaptive management." Simply stated, adaptive management uses findings from monitoring activities to inform future management actions and periodic refinement of a management plan. The 2004 Gile Flowage project (Phase I) endeavors to at establish a solid scientific baseline about the flowage and its watershed by examining existing information and identifying areas that require additional information gathering. The Phase I project also begins the work of integrating existing land planning efforts of the involved municipalities with watershed and flowage management. The Phase I efforts will inform the creation of management strategies to perpetuate healthy aquatic ecosystems. An adaptive management approach accommodates future findings by integrating this information into successive iterations of a comprehensive plan. The plan is therefore a dynamic entity, successively evolving and improving to fit the needs of the lakes and their watersheds. Implementation of a solid monitoring program is essential to the process of adaptive management. The Client has anticipated this need by focusing on existing watershed information to help plan future phases of the program.

White Water Associates is uniquely qualified for successfully carrying out the requirements of this project. Later in this proposal we provide additional documentation of our experience and abilities, but we provide a few important highlights here. We are scientists, educators, and enthusiastic water resource advocates. We have been a successful consulting firm for nearly 20

years. We are located only about 100 miles from the Gile Flowage. For many years, we have conducted lake and watershed management, lake assessment, aquatic plant surveys, shoreline and wetland restoration, and aquatic ecosystem planning. We are experienced in preparing resource management plans and monitoring programs that are not only scientifically rigorous, but practical and understandable by non-scientists. We have conducted natural resource education programs for professionals and the public including riparian ecology training programs for WDNR fisheries biologists, wildlife biologists, and forest managers. We have developed and delivered programs in riparian ecology for waterfront real estate agents in Wisconsin, Michigan, and New Hampshire. We know and work well with the natural resource agency professionals in the region and have direct experience with the Lake Planning Grants program. We combine our abilities in field ecology and limnology (freshwater science) with analytical expertise and capabilities in our water chemistry laboratory. At the end of this proposal, we provide a multi-page table with example White Water Associates projects.

We have organized this proposal around topics and headings outlined in the WDNR Lake Management Grant Application. This strategy will allow efficient preparation of applications for future Lake Planning Grants. Besides this Introduction, other sections are: (1) Project Area, (2) Problem Statement, (3) Project Goals and Objectives, (4) Methods and Activities, (5) Project Products, (6) Data to be Collected, (7) Existing and Proposed Partnerships, (8) Role of Project in Planning and Management, (9) Timetable for Implementation of Key Activities, (10) Plan for Sharing Project Results, (11) Budget, and (12) Supplemental Information in Support of Project.

PROJECT AREA

The Gile Flowage is a 3,400-acre impoundment and located in northern Iron County, Wisconsin. About two-thirds of the Flowage lies within the jurisdictional boundaries of the Town of Pence and the remaining one-third is in the Town of Carey. The Gile Flowage is classified as a Class 1 lake in Iron County's 2-tiered Lake Classification System. This is the least restrictive category using the minimum state shoreline setbacks and lot size restrictions.

The Gile Flowage was created in 1945 when the West Branch of the Montreal River was dammed to supply a water reserve for hydroelectric power generation downstream at the Superior Falls power plant. Water released from the Gile Flowage flows north and eventually into Lake Superior. The Flowage has two well-developed public access points with public piers and three

"rustic" access sites. Gile Park has a swimming beach, picnic area, park, and pavilion. Tent camping is allowed on public lands around the Flowage and on islands.

The Gile Flowage is part of a larger watershed ecosystem that influences the flowage and, in turn, is influenced by the flowage in a tightly connected ecological system. The land matrix of this watershed ecosystem is largely forested.

PROBLEM STATEMENT

Although the Gile Flowage is relatively undeveloped, it is experiencing pressures of increasing development and recreational use. The principal manager of the resource, the electrical utility, has recently changed ownership and there is uncertainty over future management. In response to concerns about protecting the Gile Flowage, a group of interested citizens met in July 2003 to determine the level of interest in forming a Gile Flowage lake association. The issues raised during the meeting focused attention on the need to develop strategies to maintain and enhance the Gile Flowage and its watershed while balancing development needs. Citizen concerns included: (1) maintaining Gile's unique natural beauty and pristine character while balancing development needs; (2) managing boating uses, including jet skis; (3) maintaining high water quality, improving fishing, and stopping exotics; and (4) maintaining consistent water levels for fishing, boating, and property values.

No lake management plan currently exists for the Gile Flowage. No systematic evaluation of existing information on the flowage has been conducted. The Towns of Carey and Pence recognize the need to develop a lake management plan for the Gile Flowage and its watershed as a key component in their comprehensive community land use plans.

The Phase I component of the Gile Flowage Watershed Plan on which White Water Associates will focus includes gathering and assessing the existing environmental information about the flowage, identifying gaps in the information, compiling a list of important ecosystem features and possible threats, and creating a list of priority actions for subsequent project phases.

The opportunity for success for the Gile Flowage planning process will stem from a capable set of program partners that are prepared to devote themselves to the realization of the program vision. These partners include the Client, citizens, lake volunteers, WDNR, Iron County resource professionals, and a capable ecological consultant. We submit that the ecological scientists of White Water Associates, Inc. are the best-qualified consultants for this important project.

PROJECT GOALS, OBJECTIVES, AND TASKS

The overarching goal of Phase I of the Gile Flowage Watershed Planning Project has three components: (1) establish a framework for watershed planning using a comprehensive land use planning model, (2) identify issues and opportunities based on an assessment of existing research, and (3) identify new research needed to complete a comprehensive watershed plan. White Water Associates work will involve all three of these components. The Phase I objectives on which White Water Associates will focus are to (1) review land use planning information, goals, and objectives developed by the Towns of Carey and Pence as part of their comprehensive land use planning process, (2) research, collect, and compile existing environmental information on the Gile Flowage, (3) identify threats to the Gile Flowage ecosystem and opportunities for management, (4) identify gaps in the existing environmental information and recommend future environmental monitoring and research needed to support Gile Flowage watershed planning, (5) identify map resources and evaluate those most useful to future planning tasks, and (6) report on Phase I findings. We outline these six important objectives and associated tasks below (tasks may be modified based on discussions with the Client and other project partners).

Objective 1. Review land use planning information, goals, and objectives developed by the Towns of Carey and Pence as part of their comprehensive land use planning process.

Task 1A: Obtain land use planning information from the Towns of Carey and Pence.

Task 1B: Review information to identify environmental management opportunities.

Task 1C: Document observations for later use in Phase I report.

Objective 2. Research, collect, & compile existing environmental information on the Flowage.

Task 2A: With assistance from Client & volunteers obtain existing Flowage information on topics such as water quality, aquatic and riparian vegetation, fish and wildlife, rare organisms and habitat, non-native organisms, biologically sensitive or unique areas, and pollution sources. Phase I focus will be on the aquatic ecosystem. Sources of information will include resource agencies, utility managers, and lake volunteers.

Task 2B: Review and document available materials with specific comments on data quality and usefulness to the planning process.

Task 2C: Meet with Client for to obtain Flowage information and contact information.

Objective 3. Identify threats to the Gile Flowage ecosystem & management opportunities.

Task 3A: Document threats to Gile Flowage ecosystem and management opportunities gleaned from the review of existing information.

Task 3B: Conduct one-day reconnaissance field trip on Gile Flowage for purpose of becoming familiar with over all watershed and flowage character as well as a general evaluation of obvious features. Document observations for later reporting.

Task 3C: Using the information review and site reconnaissance findings, compile a list of potential threats to Gile Flowage ecosystem and opportunities for management.

Objective 4. Identify gaps in existing environmental information and recommend future environmental monitoring needed to support Gile Flowage watershed planning.

Task 4A: Prepare a list of monitoring information and other new information needed to proceed with scientifically based watershed management.

Task 4B: Identify topics of special importance to be addressed by 2005 project efforts.

Objective 5. Identify map resources & evaluate those most useful to future planning tasks.

Task 5A: Obtain and evaluate map resources of value to the Gile flowage watershed management process.

Task 5B: Recommend to the Northwest Regional Planning organization maps and/or overlays useful in future monitoring & management of Gile Flowage watershed.

Objective 6. Prepare report of findings and management recommendations.

Task 6A: Integrate the various components from findings of Objectives 1 through 5 into a practical, scientific report that is understandable to non-scientists.

Task 6B: Deliver 15 copies of report & electronic version to Client by Aug. 31, 2004.

Task 6C: Meet with Client to present report findings.

In the next section, we discuss the methods and activities that will be undertaken to meet the goals and objectives of the project.

METHODS AND ACTIVITIES

A principal method to be applied in this Phase I project involves tracking down sources of existing information on the Gile Flowage area and acquiring copies of this information for later review by White Water Associates scientists. Sources are likely to be varied and sometimes obscure.. Resource agencies like the WDNR and the Federal Energy Regulatory Commission (FERC) will be a first point of contact. More local sources may also become apparent. Gile Flowage volunteers and municipal leaders will be especially valuable in identifying more local sources of existing information.

Once existing written documentation is obtained, White Water scientists will make a critical review of information. This will identify information of particular value in the planning process and highlight particular areas where information is needed.

PROJECT PRODUCTS

A practical scientific report will be the principal product resulting from Phase I. It will integrate findings from Phase I tasks and be delivered as 15 hardcopies and one electronic version (Microsoft Word format). In addition, a White Water scientist will meet with the Client to present findings. The report will be a practical, scientific document that is understandable to non-scientists and emphasizes the perpetuation of stable and healthy aquatic ecosystems.

DATA TO BE COLLECTED

Phase I emphasizes acquisition of existing data relevant to the Flowage and its watershed. This will take the form of reports from resource agencies (such as WDNR Fisheries and Federal Energy Regulatory Commission). It is possible but less likely that scientific studies of the Flowage have been conducted and the research effort will attempt to determine the existence of such studies. It is also possible that the data collected and managed by the utility-manager of the flowage will be relevant to the project. Original data to be collected over the course of the 2004 project will be restricted to observations made on the planned one-day reconnaissance trip on the Gile Flowage. Data will become the property of the Client upon completion of this project.

EXISTING AND PROPOSED PARTNERSHIPS

The proposed project will benefit from a partnership between the Towns of Carey and Pence, interested citizens (possibly in the form of a "lake association"), resource agency staff, and White Water scientists. These entities will play complimentary roles in Phase I. The local municipality is the level of government from which crucial decisions that affect aquatic ecosystems are made. Working from this position, the Client is ideally suited to coordinating project partners and volunteers and directing a program that will ensure long-term health of the Gile Flowage watershed. White Water scientists will bring aquatic ecology and educational expertise and experience to this project. As consulting scientists, they understand the challenges of developing solid practical management recommendations that are based on high quality science. White Water scientists also understand how to carry out this work on budget and on time.

ROLE OF PROJECT IN PLANNING AND MANAGEMENT

The 2004 Phase I Gile Flowage project will form the foundation for aquatic and watershed management in the area. It will gathering existing information on the Flowage and assess where information gaps exist. It will establish the first baseline of information on the Flowage so that future monitoring appropriately planned. Phase I will introduce the concept of "adaptive management" and set the stage for effective ecosystem stewardship. We believe that White Water Associates involvement will help energize citizens and future volunteer lake monitors.

TIMETABLE FOR IMPLEMENTATION OF KEY ACTIVITIES

Phase I will take place from April to August 2004. Although it is difficult to accurately predict project timing, Table 1 provides our best estimate of the timing and duration of major project tasks. Adjustments to this schedule will be made as required and in consultation with the Client.

TABLE 1. PROPOSED PROJECT TIMETABLE BY MAJOR PROJECT TASKS	
TASK	CALENDAR
Task 1A: Obtain land use planning information from Towns of Carey & Pence.	April - May 2004
Task 1B: Review land use planning information to identify environmental management opportunities.	
Task 1C: Document observations on land use planning information for later use in Phase I report.	
Task 2A: Obtain existing Gile Flowage information on aquatic ecosystem components.	April - June 2004
Task 2B: Review and document available materials with specific comments on data quality and usefulness to the planning process.	
Task 2C: Meet with Client to obtain information and contact information.	
Task 3A: Document threats to Gile Flowage ecosystem and management opportunities gleaned from the review of existing information.	June - July 2004
Task 3B: Conduct one-day reconnaissance field trip on Gile Flowage.	
Task 3C: Using information review & site reconnaissance, compile list of threats to Gile Flowage ecosystem & opportunities for management.	
Task 4A: Prepare a list of monitoring information & other new information needed to proceed with scientifically based watershed management.	July 2004
Task 4B: Identify topics of special importance to be addressed by 2005 project efforts.	
Task 5A: Obtain and evaluate map resources of value to the Gile flowage watershed management process.	June - July 2004
Task 5B: Recommend to the Northwest Regional Planning maps and/or overlays that would be useful in future monitoring and management.	
Task 6A: Integrate various components from findings of Objectives 1-5 into a practical, scientific report that is understandable to non-scientists.	July - August 2004
Task 6B: Deliver 15 copies of report & electronic version to Client by Aug. 31, 2004.	
Task 6C: Meet with Client to present report findings.	

PLAN FOR SHARING PROJECT RESULTS

Project results will be shared through two primary avenues: written report and personal presentation to the Client. The project report will be the most thorough and substantial presentation of all project findings. The Client may also choose to solicit press coverage of the Phase I project process and findings as another mechanism for sharing project results.

BUDGET

Table 2 presents our estimates of cost for the project and the allocation of effort into specific project tasks.

TABLE 2. BUDGET SUMMARY FOR PHASE I OF GILE FLOWAGE PROJECT		
TASK	**EFFORT**	**COST**
Task 1A: Obtain land use planning information from Towns of Carey & Pence.	4 hrs Sr. Ecologist @$85/h 4 hrs Field Biologist @$61/h	$ 584
Task 1B: Review land use planning information to identify environmental management opportunities.		
Task 1C: Document observations on land use planning information for later use in Phase I report.		
Task 2A: Obtain existing Gile Flowage information on aquatic ecosystem components.	10 hrs Sr. Ecologist @$85/h 15 hrs Field Biologist @$61/h	$ 1,765
Task 2B: Review and document available materials with specific comments on data quality and usefulness to the planning process.		
Task 2C: Meet with Client to obtain information and contact information.	6 hrs Sr. Ecologist @$85/h	$ 510
Task 3A: Document threats to Gile Flowage ecosystem and management opportunities gleaned from the review of existing information.	10 hrs Sr. Ecologist @$85/h 10 hrs Field Biologist @$61/h	$ 1,460
Task 3B: Conduct one-day reconnaissance field trip on Gile Flowage.		
Task 3C: Using information review & site reconnaissance, compile list of threats to Gile Flowage ecosystem & opportunities for management.		
Task 4A: Prepare a list of monitoring information & other new information needed to proceed with scientifically based watershed management.	2 hrs Sr. Ecologist @$85/h	$ 170
Task 4B: Identify topics of special importance to be addressed by 2005 project efforts.		
Task 5A: Obtain and evaluate map resources of value to the Gile flowage watershed management process.	2 hrs Sr. Ecologist @$85/h	$ 170
Task 5B: Recommend to the Northwest Regional Planning maps and/or overlays that would be useful in future monitoring and management.		
Task 6A: Integrate various components from findings of Objectives 1-5 into a practical, scientific report that is understandable to non-scientists.	10 hrs Sr. Ecologist @$85/h	$ 850
Task 6B: Deliver 15 copies of report & electronic version to Client by Aug. 31, 2004.		
Task 6C: Meet with Client to present report findings.	6 hrs Sr. Ecologist @$85/h	$ 510
Other Direct Costs (mileage, equipment rental, etc.)		$ 500
TOTAL		**$ 6,519**

White Water Associates has been involved with budgeting for several successful Lake and River Planning Grants in Wisconsin. We are experienced in preparing the proposals and in administering the projects. The budget that we have provided in this proposal is austere, but adequate to provide a quality product. To provide perspective on the costs of various kinds of lake monitoring and management projects, we have included in Appendix A an article in the Spring 2004 issue of LAKELINE (a publication of the North American Lake Management Society) entitled *Which Monitoring Program? Balancing Cost, Needs, and Accuracy.* In addition, we are confident that we can successfully assist the Client in obtaining additional funding for future project phases.

Finally, we are guided by the premise that it is much more economical and ecologically effective to maintain healthy aquatic ecosystems than to restore damaged ones. We consider it the goal of this project to avoid aggressive and expensive remedies for biological emergencies, such as an invasive "weedy" plant species or unwanted algal blooms. The key to reaching this goal is to understand the ecology of the Gile Flowage, monitor its ongoing status, and manage in a pro-active and adaptive manner.

SUPPLEMENTAL INFORMATION IN SUPPORT OF PROJECT

In this section we provide information on White Water Associates and some selected White Water scientists. We also provide a table of example projects conducted by White Water Associates, Inc.

White Water Associates and Biographical Summaries for Selected Staff

Established in 1985, White Water Associates, Inc. comprises a seasoned team of science professionals that approaches environmental problem-solving systematically and objectively. White Water offers full-service analytical chemistry as well as ecological consulting. White Water teams well with other professionals and excels in clear, accurate communication. White Water carries necessary insurances to ensure protection for its clients, including Workers Compensation and Employers Liability; Commercial General Liability; Professional Liability, Errors and Omissions; and Automobile Liability insurance. White Water Associates' website is http://www.white-water-associates.com. Attached to this document is a White Water Associates

color brochure. The remainder of this section provides biographical summaries for White Water staff likely to be involved with the Gile Flowage project. At the end of the document is a table of example White Water Associates projects.

Dean Premo, Ph.D., is President and co-founder of White Water Associates, Inc. His academic training is in zoology and ecology and much of his consulting experience has involved aquatic ecology, watershed management, and lake studies. His undergraduate degree included certification for secondary science education. Dr. Premo currently oversees all major consulting projects conducted by White Water Associates. He currently serves as the Chairman of the Water Quality Monitoring Advisory Board to the Michigan Department of Environmental Quality. He has served as a consultant to the U.S. Environmental Protection Agency Science Advisory Board and is a former member of the National Research Council (research arm of the National Academy of Sciences) Committee on Inland Aquatic Ecosystems. Dr. Premo's work regarding biodiversity and ecosystem health with forest managers has received regional and national recognition and has been featured in The New York Times. Together with White Water colleague, Elizabeth Roger, Dr. Premo has developed and delivered education programs for resource professionals in Wisconsin and Michigan and a innovative education program for waterfront real estate agents in Michigan, Wisconsin, and New Hampshire. Dean Premo is a Certified Senior Ecologist (Ecological Society of America).

Elizabeth Rogers, Ph.D. is a senior ecological scientist for White Water Associates, Inc. Her duties with the firm include ecological research design and analysis, aquatic and terrestrial field botany, wetland delineation and mitigation monitoring, environmental education, grant writing, and database management. Dr. Rogers doctorate degree is in zoology/ornithology and her masters degree is in environmental education. She is a seasoned field scientist with 25 years experience in environmental education and natural resource management and over 30 years work in bird field identification. Dr. Rogers is currently on a National Research Council Committee on Riparian Zone Functioning and Strategies for Management. She served on the National Science Foundation's Committee of Visitors, Washington, D.C., May 1998. She also participated in a 1998 meeting of scientists involved in integrating biodiversity concerns into the Sustainable Forestry Initiative of the pulp and paper industry. Dr. Rogers has designed and delivered educational programs for a variety of audiences including foresters, zoning officials, lakefront real estate agents, and land managers. She has successfully designed programs and acquired

funding for K-12 schools to implement innovative "project-based" learning experiences for children such as "Tracks at Your Doorstep" (funded by Toyota Tapestry) and "From A Brook Trout's Point of View" (funded by Trout Unlimited).

Kent Premo, M.S. is the systems support scientist, publications specialist, and technical editor for White Water Associates. His degrees bachelor's and master's degrees are in botany and plant pathology. Mr. Premo assisted Oneida County, Wisconsin develop a GIS database for classification of its 1,200 lakes. In 1998, he attended a training workshop on lake classification and shoreland zoning sponsored by the North American Lake Management Society and Wisconsin Association of Lakes. He is currently a project scientist for a WDNR Rivers Planning Grant in Florence County using GIS as an important tool in watershed management. He recently completed a pilot project for the WDNR on a northern Wisconsin Lake documenting current states of shoreline development. In many water quality projects, Mr. Premo is responsible for deployment and maintenance of remote sensing devices for continuous monitoring of dissolved oxygen, temperature, and other water quality measures. This work includes data management and interpretation. Mr. Premo has considerable experience with scientific writing, education, and publication. From 1992 through 1997, he edited and published Strategies, a periodical that provided unique, practical information to resource managers. Mr. Premo has edited two scientific review textbooks. His publishing skills also include production of camera-ready graphics (illustrations, maps, and photographs).

Bette Premo, Ph.D., is White Water Associates Chief Executive Officer, with graduate training in limnology (freshwater ecosystem science) and 21 years of professional experience. Her doctoral research involved watershed management as related to nonpoint source phosphorus inputs in agricultural landscapes. For her M.S. degree, Dr. Premo studied aquatic invertebrate communities. She spent 16 months as a research scientist in Java, Indonesia studying water quality problems as related to agriculture and other land management practices. Dr. Premo is a member of Michigan's Environmental Science Board and as such reviews environmental issues and translates them for general public presentation, in formats that include white papers, handbooks and public hearings. For White Water Associates, Dr. Premo consults on hydrological studies of groundwater movement, lake and stream bathymetry, flow studies, water quality monitoring, baseline inventories and sediment contamination and transport. She has served as principal scientist for water quality studies and aquatic ecosystem habitat assessments related to

FERC relicensing projects for major hydroelectric companies. She assisted Oneida County, Wisconsin in designation and classification of 1,200 lakes for purposes of establishing shoreland ecosystem management and zoning regulations. Dr. Premo has written and procured grants for environmental, cultural, education, and recreation projects for municipalities, intermediate school districts, universities, and corporations. Most recently, she procured nearly $200,000 for a municipality to establish a river walk and interpretive trail. Bette Premo is the president of the Iron River Watershed Council, a grassroots organization that coordinates and funds watershed restoration and education. In addition to her duties as White Water's CEO and project scientist, Bette manages White Water's laboratory staff and consults on data quality control issues.

David Tiller, B.S. Associate Consultant/ Field Biologist, serves as a field biologist on many of White Water's ecological research and assessment projects. He conducts many of White Water's environmental assessment projects. His expertise includes identification of aquatic and terrestrial plants, aquatic sampling, wetland identification, classification, and evaluation; wildlife habitat inventory; and systematic surveys of birds and mammals. David Tiller's recent design and installation of a large (20 acre) mitigation wetland in Menominee County, Michigan included collection and interpretation of hydrological data, site inspections, excavation plans, and use of over 50 species of native plants in aquatic, wet meadow, and riparian habitats. Mr. Tiller has over twenty years of wide geographic experience in field identification of birds and serves as a key field ornithologist for many of the firm's projects. He is a current member of the Wisconsin Society for Ornithology. An expert in recognizing mammal tracks and signs, Mr. Tiller frequently conducts mammal censuses as part of our ecological assessments. Mr. Tiller's continued formal training has included an intensive field course in delineation of jurisdictional wetlands sponsored by Michigan State University with cooperation by the Michigan Department of Natural Resources and wetland delineation training by the Wisconsin Coastal Zone Management Program.